

CLAIMS

1. An apparatus comprising:

a first ring-like mass rotating in a first plane, said first ring-like mass comprising a first material, said first material comprising a first density;

a second ring-like mass rotating in a second plane, said second ring-like mass comprising a second material, said second material comprising a second density;

a third ring-like mass rotating in a third plane, said third ring-like mass comprising a third material, said third material comprising a third density; and

wherein said first density is different from said second density and said third density; and said second density is different from said third density.
2. The apparatus of Claim 1 wherein said first rotating ring-like mass is constructed from a titanium metal.
3. The apparatus of Claim 1 wherein said second rotating ring-like mass is constructed from a stainless steel metal.
4. The apparatus of Claim 1 wherein said third rotating ring-like mass is constructed from a tungsten nickel alloy metal.

5. The apparatus of Claim 1 wherein:

said first rotating ring-like mass is constructed from a titanium metal;

said second rotating ring-like mass is constructed from a stainless steel metal; and

said third rotating ring-like mass is constructed from tungsten nickel alloy metal.

6. The apparatus of Claim 1 wherein:

said first rotating ring-like mass is constructed from a titanium metal having a density of 4.420 g/cc;

said second rotating ring-like mass is constructed from a stainless steel metal having a density of 7.886 g/cc; and

said third rotating ring-like mass is constructed from tungsten nickel alloy metal having a density of 17.000 g/cc.

7. The apparatus of Claim 1 wherein said first plane is substantially perpendicular to said second plane and said third plane; and wherein said second plane is substantially perpendicular to said third plane.

8. The apparatus of Claim 1 wherein:

said first ring-like mass generates a first angular momentum;

said second ring-like mass generates a second angular momentum;

said third ring-like mass generates a third angular momentum; and

said first, second, and third angular momentums are equal.

9. The apparatus of Claim 1 wherein:

said first plane is substantially perpendicular to said second plane and said third plane;

said second plane is substantially perpendicular to said third plane; and

said first, second, and third angular momentums are equal.

10. The apparatus of Claim 1 further comprising:

a first containment ring;

a second containment ring;

a third containment ring, wherein each of said first, second, and third ring-like masses are contained within one of said three containment rings; and

a pedestal, said pedestal supporting each of said three containment rings.

11. The apparatus of Claim 10 wherein said pedestal comprises:

at least one z-plane pedestal component;

at least one y-plane pedestal component; and

at least one x-plane pedestal component.

12. The apparatus of Claim 10 further comprising:

a first containment ring;

a second containment ring;

a third containment ring, wherein each of said first, second, and third ring-like masses are contained within one of said three containment rings;

a rotatable joint connecting said first containment ring to said second containment ring;
and

a rotatable joint connecting said second containment ring to said third containment ring.

13. The apparatus of Claim 12 wherein:

said first plane is substantially perpendicular to said second plane and said third plane;

said second plane is substantially perpendicular to said third plane; and

said first, second, and third angular momentums are equal.

14. The apparatus of Claim 12 wherein:

said first plane is substantially non-perpendicular to said second plane and said third plane;

said second plane is substantially non-perpendicular to said third plane; and

said first, second, and third angular momentums are unequal.

15. The apparatus of Claim 12 further comprising a housing, said housing containing said containment rings, said rotatable joints and said ring-like masses.

16. The apparatus of Claim 1 further comprising:

a first containment ring;

a second containment ring;

a third containment ring, wherein each of said first, second, and third ring-like masses are contained within one of said three containment rings;

a plurality of ring clamps connecting said first containment ring to said second containment ring and connecting said second containment ring to said third containment ring.

17. The apparatus of Claim 15 further comprising a housing, said housing containing said containment rings, said clamps and said ring-like masses.

18. A method comprising the steps of:

rotating a first ring-like mass rotating in a first plane, said first ring-like mass comprising a first material, said first material comprising a first density;

rotating a second ring-like mass rotating in a second plane, said second ring-like mass comprising a second material, said second material comprising a second density;

rotating a third ring-like mass rotating in a third plane, said third ring-like mass comprising a third material, said third material comprising a third density; and

wherein said first density is different from said second density and said third density; and said second density is different from said third density.

19. The method of Claim 18 wherein:

said first plane is substantially perpendicular to said second plane and said third plane;

said second plane is substantially perpendicular to said third plane; and

said first, second, and third angular momentums are equal.

20. The method of Claim 18 wherein:

said first plane is substantially non-perpendicular to said second plane and said third plane;

said second plane is substantially non-perpendicular to said third plane; and

said first, second, and third angular momentums are unequal.

21. An apparatus comprising:

a first ring-like mass rotating in a first plane, said first ring-like mass comprising a first material, said first material comprising a first density;

a second ring-like mass rotating in a second plane, said second ring-like mass comprising a second material, said second material comprising a second density;

a third ring-like mass rotating in a third plane, said third ring-like mass comprising a third material, said third material comprising a third density;

three containment rings, each of said three containment rings further comprising an exterior surface and wherein each of said first, second, and third ring-like masses are contained within one of said three containment rings;

a pedestal supporting each of said three containment rings;

a plurality of magnets wherein at least two of said plurality of magnets is embedded into each of said first ring-like mass and said second ring-like mass and said third ring-like mass;

a plurality of hall effect sensors, at least two of said plurality of hall effect sensors being affixed to said exterior surface of said three containment rings, wherein said plurality of hall effect sensors monitor the location of said plurality of magnets;

a plurality of coils, wherein at least four of the plurality of coils is wrapped around said exterior surface of each of said three containment rings; and

a housing, said housing containing said pedestal, said containment rings, and said ring-like masses.

22. The apparatus of claim 21, further comprising:

a master control program residing in a memory;

a control circuit, said control circuit communicating with a drive circuit; wherein said control circuit receives a command from said master control program wherein said drive circuit sends a signal to said drive circuit;

a hall effect sensor circuit, said hall effect sensor circuit communicating with said master control program and with said plurality of hall effect sensors, thereby sensing a location for said plurality of magnets and transmitting said location to said master control program;

a drive circuit, said drive circuit communicating with said control circuit and said coils, said drive circuit receiving a command from said control circuit and said drive circuit controlling a rate of rotation for each of said first ring-like mass and said second ring-like mass and said third ring-like mass in accordance with said command.

23. The apparatus of Claim 21 wherein:

said first plane is substantially perpendicular to said second plane and said third plane;
and

said second plane is substantially perpendicular to said third plane.

24. The apparatus of Claim 21 wherein
- said first ring-like mass generates a first angular momentum;
- said second ring-like mass generates a second angular momentum;
- said third ring-like mass generates a third angular momentum; and
- said first, second, and third angular momentums are equal.
25. The apparatus of Claim 21 wherein said pedestal comprises two half pedestals, each said half pedestal comprising:
- a z-plane pedestal component;
- a y-plane pedestal component; and
- an x-plane pedestal component.
26. The apparatus of Claim 25 wherein at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprises at least one optional cooling aperture.
27. The apparatus of Claim 25 wherein said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprise a plurality of assembly slots.

28. The apparatus of Claim 25 wherein at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprise at least one plurality of ring guides.
29. The apparatus of Claim 25 wherein at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprise at least one connection aperture.
30. The apparatus of Claim 25 wherein:
- at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprises at least one optional cooling aperture;
- said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprise a plurality of assembly slots;
- at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprise at least one plurality of ring guides;
- at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component further comprise at least one connection aperture; and
- a pair of connectors connecting at least one of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component to at least another of said z-plane pedestal component, said y-plane pedestal component, and said x-plane pedestal component.